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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/520,501

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Graham Hodgson

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EXAMINER

LEADER, WILLIAM T

ART UNIT

PAPER NUMBER

1795

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/520,501	<b>Applicant(s)</b> HODGSON ET AL.	
	<b>Examiner</b> WILLIAM T. LEADER	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 16, 17 and 19-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16, 17 and 19-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Receipt of the papers filed on January 15, 2008, is acknowledged. Claim 18 has been canceled. Claims 16, 17 and 19-36 are pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Applicant's amendments to the claims are deemed to have overcome the rejection of record. In response to the amendments, the following new rejections are made.

### ***Claim Rejections - 35 USC § 102***

4. Claims 16, 19, 26 rejected under 35 U.S.C. 102(b) as being anticipated by Hodgson et al (5,688,384).
5. The Hodgson et al patent is directed to a fluorine electrolytic cell. As shown in figure 1 and described at column 6, line 36 to column 7, line 11, the cell of Hodgson comprises an anode connection member [42] having an end portion, a skirt wall structure [22] having a top plate [24] which has an aperture through which the anode connection member passes, a skirt wall top plate closure member [26] in sealing engagement with the skirt wall top plate and in electrical communication

with the anode connection member to constitute an anode connection to the cell (through stud 50), and a non-conductive spacer member [28] disposed between the skirt wall top plate closure member and the skirt top plate.

6. Claim 16 additionally recites that the end portion of the anode connection member is disposed “within” the skirt wall top closure member. Hodgson et al discloses that the anode connection member [42] may be connected to closure member [26] by welding (column 6, lines 58-59). This arrangement does not require a through-hole in the closure member [26]. See column 7, lines 1-2. The lack of a through-hole would eliminate a potential source of leakage. The welding would have been expected to have caused some degree of interdiffusion between connection member [42] and closure member [26] which would result in the end of the connection member being “within” the closure member. See Bandyopadhyay (5,203,397) which teaches welding results in interdiffusion (column 2, lines 42-43).

7. With respect to claim 19, the spacer member is of a generally annular form around the anode connection member. See figure 1. With respect to claim 26, Hodgson discloses welding at column 6, lines 58-59 as noted above.

***Claim Rejections - 35 USC § 103***

8. Claims 16, 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al (5,688,384) in view of Bandyopadhyay (5,203,397).

9. If Hodgson et al is interpreted as disclosing welding but not requiring interdiffusion, claim 16 differs from Hodgson by reciting that the end portion of the anode connection member is disposed “within” the closure member.

Bandyopadhyay is directed to apparatus including a heating assembly in which closure members 12 and 13 are hermetically sealed to protective tube 11 and the outer wall of nozzle 3 to prevent damage from metal spray during operation. The parts are joined by welding in which interdiffusion of material occurs. See column 2, lines 35-43, 58-65 and column 4, lines 37-41. Hodgson also faces the problem of joining parts in aggressive operating conditions (corrosive fluorine), and

Bandyopadhyay teaches that welding with interdiffusion addresses this problem.

The prior art of record is indicative of the level of skill of one of ordinary skill in the art. It would have been obvious at the time the invention was made to have secured the end portion of the anode connection member to the closure member of Hodgson by welding with interdiffusion as taught by Bandyopadhyay because a more secure bond would have been obtained. As noted above, with respect to claim 19, the spacer member is of a generally annular form around the anode connection member.

10. Claims 16, 19 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al (5,688,384) in view of Tharp (6,210,549).

11. Hodgson et al is interpreted as above. Claim 27 differs from Hodgson by reciting that the end portion of the anode connection portion is connected to the skirt wall closure member by at least one mechanical fastener.

12. The Tharp patent is directed to a fluorine electrolytic cell. As shown in figure 1, the cell of Tharp comprises an anode connection member having an end portion [7], a skirt wall structure [30] having a top plate which has an aperture through which the anode connection member passes, a skirt wall top plate closure member [26] in sealing engagement with the skirt wall top plate, and a non-conductive spacer member disposed between the skirt wall top plate closure member and the skirt top plate. The anode connection member is threaded (column 8, lines 54-55). Tharp additionally shows in figure 1 that closure member [26] is fastened to head plate [2] with bolts which have an end portion within a corresponding threaded opening in the head plate. It would have been obvious at the time the invention was made to have threaded the anode connection member of Hodgson as taught by Tharp and to have provided a correspondingly threaded opening in the closure member in the manner illustrated in figure 1 of Tharp because the anode connection member would have been connected to the closure member without requiring a through hole through which fluorine might escape. The end of the anode connection

member would have been disposed “within” the top plate closure member as recited in claim 16.

13. With respect to claims 28 and 29, Tharp shows in figures 1 and 2 a plurality of closure members in the axial direction. It would have been obvious to have provided an additional closure member in the axial direction to have more securely sealed the cell against fluorine leaks. Claim 30 is directed to a method rather than an apparatus, but recites limitations similar to those of claim 16.

14. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al (5,688,384) in view of Tharp (6,210,549) as applied to claims 16, 19 and 27-30 above, and further in view of Oka et al (Jp 2002-161387).

15. Claim 17 differs from Hodgson et al by reciting that the spacer member is made from a ceramic. Oka et al is interpreted as in the previous office action and teaches a connection member for the anode in a fluorine electrolytic cell (paragraph 1). Oka et al teaches making a sealing member out of a ceramic, preferably alumina, because of its good electrical insulation properties and corrosion resistance (paragraphs 14 and 23; figure 3). It would have been obvious at the time the invention was made to have made the non-conductive sealing spacer member of Hodgson of an alumina ceramic as taught by Oka et al because it would have provided strong electrical insulation and good corrosion resistance.

16. Claims 20, 21, 24, 25, 31, 32, 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al (5,688,384) in view of Tharp (6,210,549) as applied to claims 16, 19 and 27-30 above, and further in view of Pohto (4,354,916).

17. Claims 20, 21, 31 and 32 differ from Hodgson by reciting that the spacer member is disposed between gaskets that seal an upper face and lower face, and that at least one of the gaskets is a spiral wound gasket. Pohto is interpreted as in the previous office action. Pohto is directed toward a fluid/gas-tight component for joining together a cathode plate and an anode plate in an electrolytic cell. See the abstract. Photo teaches that gaskets of the spiral wound variety are useful in allowing for fluid/air-tight sealing between bipolar components in an electrolytic cell (column 3, lines 22-28 and column 4, lines 20-42). It would have been obvious at the time the invention was made to have used spiral wound gaskets as disclosed by Pohto, and to have positioned them above and below the non-conducting sealing spacer member of Hodgson because it would have allowed for a gas tight electrolytic cell thus preventing leakage of fluorine gas.

18. With respect to claims 24, 25, 35 and 36 Pohto further discloses washers [20] (keeper rings) disposed on either side of the spiral/coils [15] in order to maintain pressure between the plates (column 4, lines 20-42).



19. Claims 22, 23, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hodgson et al (5,688,384) in view of Tharp (6,210,549) and further in view of Pohto (4,354,916) as applied to claims 20, 21, 24, 25, 31, 32, 35 and 36 above, and additionally in view of Arenas (4,544,078).

20. Claims 22, 23, 33 and 34 differ from Hodgson by reciting that at least one of the gaskets is a metal bead gasket and that the metal bead gasket includes a metal plate having a bead embossed therein. Arenas teaches a method of sealing an opening in containers to make fluid-tight seals in order to prevent leakage (abstract), especially useful in sealing an electrolytic cell (column 5, lines 41-43). Arenas teaches a plug member that is a metal sealing ball [40] embossed with a plate-like metal (nickel or stainless steel) plug member [42] having a plate-like structure at the bottom (column 6, lines 34-61; figures 1 and 2). It would have been obvious at the time the invention was made to have used a metal ball coupled to a metal plate to have formed a sealing gasket as done by Arenas and to have used it in the seal in Hodgson because it would have provided effective sealing of the electrolytic cell thus preventing leakage.

21. Applicant's arguments have been carefully considered but are rendered moot by the new grounds of rejection.

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **WILLIAM T. LEADER** whose telephone number is (571) 272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on 571-272-1293. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

William Leader  
April 9, 2008

/Susy N Tsang-Foster/  
Supervisory Patent Examiner, Art Unit 1795